

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior version and listing of claims in the present application. Please amend claim 15. Please cancel claims 30-33.

1. (Withdrawn) A heat shrinkable polyester film having a transverse tear defect percentage of about 20% or less as determined in the following vibration test:

the film is rolled into a tubular shape, two of its opposite edges bonded together, and then the tubular film is placed around a vertical stack (total weight: 660 g) of three food container cans each having a diameter of 72 mm and a height of 55 mm; the can stack with the tubular film placed therearound is passed through a shrink tunnel to shrink the tubular film onto the can stack; a total of 18 packs of such can stacks are placed into a cardboard box having a length of 455 mm, a width of 230 mm and a height of 165 mm (6 packs in the length direction by 3 packs in the width direction), and the cardboard box is sealed; the cardboard box is vibrated along the width direction for 30 min by a stroke of 50 mm and at a vibration rate of 180 reciprocations/min, after which the transverse tearage of the tubular film is visually observed; and the transverse tear defect percentage (%) is determined based on the number of defective packs per 18 packs, wherein the defective pack is any pack having a tear flaw of 30 mm or longer along a can periphery.

2. (Withdrawn) A heat shrinkable polyester film according to claim 1, wherein the film has a longitudinal refractive index N_x and a transverse refractive index N_y which satisfy the following expressions (1) and (2):

$$1.561 < N_x < 1.566 \quad (1); \text{ and}$$

$$0.040 < N_y - N_x < 0.070 \quad (2).$$

3. (Withdrawn) A heat shrinkable polyester film according to claim 1, wherein the film has a shrinkage of about 50% or more along its main shrinkage direction when the film is put in hot water of 95°C for 10 sec.

4. (Withdrawn) A heat shrinkable polyester film according to claim 1, wherein the film has a shrinkage of about 10% to about 25% along a direction perpendicular to its main shrinkage direction when the film is put in hot water of 95°C for 10 sec.

5. (Withdrawn) A heat shrinkable polyester film according to claim 1, wherein the film has a solvent adhesiveness with 1,3--dioxolane.

6. (Withdrawn) A heat shrinkable polyester film according to claim 1, wherein the film can be used as a multi-packaging film.

7. (Previously presented) A heat shrinkable polyester film produced from a polyester composition containing 50 weight % to 99.9 weight % of a non-elastomeric polyester and 0.1 weight % to 50 weight % of a polyester elastomer, wherein:

the film has a shrinkage of about 10% to about 40% along its main shrinkage direction in water of 70°C for 5 seconds;

the film has a shrinkage of about 50% or more along its main shrinkage direction in water of 95°C for 5 seconds;

the film has a shrinkage of about 10% or less along a direction perpendicular to its main shrinkage direction in water of 95°C for 5 seconds; and

the film has an adhesive retention of about 95% or more after shrinkage,

wherein adhesive retention after shrinkage is given by ((number of samples evaluated – number of defectives) / number of samples evaluated) x 100 (%) as determined after samples are produced by the following process:

applying 1,3-dioxolane to a width of 2 mm on one side of a sample film at a first edge, rolling the sample film into a tubular film and bonding the first edge onto the opposite edge to form a tubular label, and heat-shrinking the label onto a metal cylinder at a temperature of 200°C for 2 seconds,

and wherein a sample is considered defective if the bond is partially or totally peeled, or can easily be peeled by hand.

8. (Original) A heat shrinkable polyester film according to claim 7, wherein the bonded portion of the label has an adhesive retention of about 97% or more after shrinkage.

9. (Original) A heat shrinkable polyester film according to claim 7, wherein the bonded portion of the label has an adhesive retention of about 99% or more after shrinkage.

10. (Original) A heat shrinkable polyester film according to claim 7, wherein the bonded portion of the label has an adhesive retention of about 99.5% or more after shrinkage.

11-13. (Cancelled)

14. (Original) A cap sealing label made of a heat shrinkable polyester film according to claim 7.

15. (Currently amended) A heat shrinkable polyester film produced from a polyester composition containing 50 weight % to 99.9 weight % of a non-elastomeric polyester and 0.1 weight % to 50 weight % of a polyester elastomer, wherein:

the film has a shrinkage of about 10% to about 40% along its main shrinkage direction in water of 70°C for 5 seconds;

the film has a shrinkage of about 50% or more along its main shrinkage direction in water of 95°C for 5 seconds;.

the film has a shrinkage of about 10% or less along a direction perpendicular to its main shrinkage direction in water of 95°C for 5 seconds;

the film has a film haze of about 3% to about 10% for a film thickness of 50 μm ; and

the film has an adhesive retention of about 95% or more after shrinkage,

wherein adhesive retention after shrinkage is given by $((\text{number of samples evaluated} - \text{number of defectives}) / \text{number of samples evaluated}) \times 100 (\%)$ as determined after samples are produced by the following process:

applying 1,3-dioxolane to a width of 2 mm on one side of a sample film at a first edge, rolling the sample film into a tubular film and bonding the first edge onto the opposite edge to form a tubular label, and heat-shrinking the label onto a metal cylinder at a temperature of 200°C for 2 seconds,

and wherein a sample is considered defective if the bond is partially or totally peeled, or can easily be peeled by hand.

16-18. (Cancelled)

19. (Original) A cap sealing label made of a heat shrinkable polyester film according to claim 15.

20. (Previously presented) A heat shrinkable polyester film produced from a polyester composition containing 50 weight % to 99.9 weight % of a non-elastomeric polyester and 0.1 weight % to 50 weight % of a polyester elastomer, wherein:

the film has a shrinkage of about 10% to about 40% along its main shrinkage direction in water of 70°C for 5 seconds;

the film has a shrinkage of about 50% or more along its main shrinkage direction in water of 95°C for 5 seconds;

the film has a shrinkage of about 10% or less along a direction perpendicular to its main shrinkage direction in water of 95°C for 5 seconds;

the film has a shrinkage of about 15% to about 30% along its main shrinkage direction in water of 80°C for 5 seconds after a preform process consisting of applying 1,3-dioxolane to a width of 2 mm on one side of a sample film at a first edge, rolling the sample film into a tubular film and bonding the first edge onto the opposite edge to form a tubular label, and heat-shrinking the label onto a metal cylinder at a temperature of 200°C for 2 seconds; and

the film has an adhesive retention of about 95% or more after shrinkage,

wherein adhesive retention after shrinkage is given by $((\text{number of samples evaluated} - \text{number of defectives}) / \text{number of samples evaluated}) \times 100 (\%)$ as determined after samples are produced by the preform process,

and wherein a sample is considered defective if the bond is partially or totally peeled, or can easily be peeled by hand.

21-23. (Cancelled)

24. (Original) A cap sealing label made of a heat shrinkable polyester film according to claim 20.

25. (Previously presented) A heat shrinkable polyester film produced from a polyester composition containing 50 weight % to 99.9 weight % of a non-elastomeric polyester and 0.1 weight % to 50 weight % of a polyester elastomer, wherein:

the film has a shrinkage of about 10% to about 40% along its main shrinkage direction in water of 70°C for 5 seconds;

the film has a shrinkage of about 50% or more along its main shrinkage direction in water of 95°C for 5 seconds;

the film has a shrinkage of about 10% or less along a direction perpendicular to its main shrinkage direction in water of 95°C for 5 seconds;

the film has a preform finish defective percentage of about 1% or less,

wherein the preform finish defective percentage is determined by (number of defectives) / (number of samples evaluated) x 100% as determined after samples are produced by a preform process consisting of applying 1,3-dioxolane to a width of 2 mm on one side of a sample film at a first edge, rolling the sample film into a tubular film and bonding the first edge onto the opposite edge to form a tubular label, and heat-shrinking the label onto a metal cylinder at a temperature of 200°C for 2 seconds,

and wherein a sample is considered defective if the sample exhibits creasing, jumping, or insufficient shrinkage; and

the film has an adhesive retention of about 95% or more after shrinkage,

wherein adhesive retention after shrinkage is given by ((number of samples evaluated – number of defectives) / number of samples evaluated) x 100 (%) as determined after samples are produced by the preform process,

and wherein the sample is considered defective if the bond is partially or totally peeled, or can easily be peeled by hand.

26-28. (Cancelled)

29. (Original) A cap sealing label made of a heat shrinkable polyester film according to claim 25.

30-33. (Canceled)